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EXAMINER

GREENE, JASON M

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 11/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/767,148

Applicant(s)

WYNN, GERALD M.

Examiner

Jason M. Greene

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-28 is/are allowed.
- 6) ☒ Claim(s) 1,2,9-16,20 and 29 is/are rejected.
- 7) ☒ Claim(s) 3-8 and 17-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/2/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.84(h) because Figs. 3 and 3A are connected by projection lines. The drawings are objected to under 37 CFR 1.84(u)(1) because Figures 12-21 are not preceded by the abbreviation "Fig.". The drawings are also objected to because Figs. 5, 8, 10 and 12-24 are dark, blurry and unclear. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claims***

2. Claim 12 recites the phrase “said filter element” in lines 2 and 4. However, the claim does not previously recite the air filter comprising a filter element. For examination purposes, the phrase has been treated as though it read as “said filter media”. If this treatment is correct, the Examiner suggests Applicants rewrite the phrase as “said filter media” to provide improved antecedent basis.

3. Likewise, claim 16 recites the phrase “said pleated filter element” in line 2. For examination purposes, the phrase has been treated as though it read as “said pleated filter media”. If this treatment is correct, the Examiner suggests Applicants rewrite the phrase as “said pleated filter media” to provide improved antecedent basis.

4. Claim 29 recites the phrase “the peripheral wall of the base surface” in lines 15-16. However, since the claim does not previously recite the air filter having a base surface, the phrase has been interpreted as being the peripheral wall of the filter frame. If this interpretation is correct, the Examiner suggests Applicants rewrite the phrase as “the peripheral wall of the filter frame” to improve the clarity and precision of the claim language and to provide improved antecedent basis.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Schaaf (U.S. Patent No. 2,393,419).

With regard to claims 1 and 11, Schaaf discloses a disposable air filter comprising a filter frame (10) and a pleated air filter media (23), said pleated air filter media having generally rectangular interconnected panels collapsible so that adjacent panels are disposed in juxtaposed relation, said filter frame being made from a generally planar blank that is pre-scored (along lines 11,12,13), slit and die-cut to define a rectangular filter frame having a central area enabling airflow therethrough and having laterally opposite longitudinal and transverse wall panels (10a) foldable to positions normal to said central area and defining a peripheral wall about said central area sized to receive and support the pleated filter media when in an expanded condition so that substantially all air passing into said central area passes through said filter media, said filter frame blank being foldable (along lines 13) to a substantially flat condition having a rectangular size generally equal to the rectangular size of the collapsed filter media panels so as to enable compact stacking with said collapsed filter media and insertion into a carton, wherein the filter frame central area has a

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substantially greater air flow open area than a remaining non-open area of said central area in Figs. 1-6 and page 1, col. 1, line 1 to page 2, col. 1, line 2.

With regard to claim 2, Schaaf discloses filter frame longitudinal and transverse wall panels (10a) have means (material between lines 11 and 13, end tongues 20 and overlapping ears 21) on opposite ends thereof enabling said wall panels to be interconnected to form a rectangular air filter frame, said filter frame wall panels having planar panel portions (10a) and laterally opposite longitudinal marginal edge portions (10b) foldable to positions normal to said planar panel portions so as to define wall panels having channel-shaped transverse cross-sections to receive and retain said expanded pleated filter media in Figs. 1-6 and page 1, col. 1, line 1 to page 2, col. 1, line 2.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schaaf (U.S. Patent No. 2,393,419) in view of Wysocki (U.S. Patent No. 4,570,844).

Schaaf does not disclose the means on the opposite ends of the walls panels enabling said panels to be interconnected to form a rectangular air filter frame including mutually cooperating slots and tabs.

Wysocki discloses a similar air filter frame (2) including means on the opposite ends of the walls panels enabling said panels to be interconnected to form a rectangular air filter frame, said means including mutually cooperating slots (54) and tabs (42) in Figs. 1 and 4.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the slots and tabs of Wysocki into the overlapping ears (21) of Schaaf to allow the overlapping ears to be joined without using rivets or adhesive to reduce manufacturing costs.

9. Claims 10 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schaaf (U.S. Patent No. 2,393,419) in view of Kubokawa et al. (U.S. Patent Application Publication 2003/0230061 A1).

With regard to claims 10, 13 and 14, Schaaf does not disclose an end plate being secured in juxtaposed relation to an outer exposed surface of each end panel of said filter media, said end plates being substantially equal in size to the exposed surface area of the corresponding filter media panel.

Kubokawa et al. discloses a similar filter media (2) comprising an end plate (26) in juxtaposed relation to an outer exposed surface of each end panel (28,30) of said

filter media, said end plates being substantially equal in size to the exposed surface area of the corresponding filter media panel, wherein said end plates are made from rigid cardboard in Figs. 1-3 and paragraphs [0035]-[0036].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the end plates of Kubokawa et al. into the filter media of Schaaf to provide the end panels with increased stiffness to improve the handlability of the filter media and to allow the filter media to be expanded and collapsed easily and uniformly, as suggested by Kubokawa et al. in paragraph [0035].

With regard to claim 12, Schaaf discloses the rectangular filter media panels having greater longitudinal length than transverse width, said filter element pleats having greater longitudinal length than the distance between said filter frame wall panels adjacent the ends of said filter element pleats when disposed within said filter frame with the longitudinal lengths of said filter panels substantially normal to said adjacent filter frame wall panels so as to prevent air passage between the ends of said filter panels and said adjacent filter frame wall panels in Figs. 1 and 2.

With regard to claims 15 and 16, Schaaf does not disclose the air filter assembly including means secured to a selected side surface of the pleated filter media for preventing collapse of the panels during passage of air through the filter assembly.

Kubokawa et al. teaches a similar air filter media (2) having opposite side surfaces, wherein a metallic mesh support grid (8) is adhesively secured to a selected



side surface of the pleated filter media for preventing collapse of the panels during passage of air through the filter assembly in Figs. 1-3 and paragraphs [0028] and [0039].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the support grid of Kubokawa et al. into the filter media of Schaaf to provide spacing for the pleats and to provide the filter media with sufficient strength to prevent distortion, as suggested by Kubokawa et al. in paragraph [0039].

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osendorf et al. (U.S. Patent No. 5,743,927) in view of Kubokawa et al. (U.S. Patent Application Publication 2003/0230061 A1).

Osendorf et al. discloses a method of making a disposable air filter kit comprising the steps of providing an expandable pleated filter media (5) having a plurality of generally equal size rectangular filter panels, providing a filter frame including a plurality of frame member panels (10,11,12,13) adapted to be stacked in juxtaposed relation with said pleated filter media when in a collapsed condition, said frame member panels having means (tabs 20,21,40,41 and slots 90,91) disposed on free ends thereof for enabling interconnection of said panels to create a rectangular filter frame sized to receive said pleated filter media into said filter frame when expanded so that opposite free end edges on said filter panels engage selected frame member panels to prevent air passage past the free ends of said filter panels, and providing a plurality of

separating fingers (105 on spacer 6) adapted to be compactly stacked with said frame members and collapsed pleated filter media into a kit and being cooperative with said frame member panels to enable insertion of said fingers into openings created between adjacent pleats in the expanded filter media to maintain the pleats in stable positions in the assembled air filter in Figs. 1-5, 9 and 12 and col. 1, line 62 to col. 4, line 56 and col. 6, line 37 to col. 9, line 65.

Osendorf et al. does not disclose end plates being affixed to outer exposed surfaces of the opposite end panels.

Kubokawa et al. discloses a similar filter media (2) comprising an end plate (26) affixed to outer exposed surfaces of each opposite end panel (28,30) of said filter media in Figs. 1-3 and paragraphs [0035]-[0036].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the end plates of Kubokawa et al. into the filter media of Osendorf et al. to provide the end panels with increased stiffness to improve the handlability of the filter media, as suggested by Kubokawa et al. in paragraph [0035].

11. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raber (U.S. Patent No. 6,074,450) in view of Kubokawa et al. (U.S. Patent Application Publication 2003/0230061 A1).

Raber discloses a method of making a disposable air filter (10) comprising the steps of providing an expandable pleated filter element (11) having a plurality of

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generally equal size rectangular filter panels with adjacent panels being interconnected at mutually opposed longitudinal edges, providing a filter frame (30) having a generally planar central area and laterally opposed pairs of sidewalls disposed in normal relation to said central area and having mutually interconnected ends so as to establish a continuous wall peripherally of said central area, said central area having an opening enabling air to pass therethrough, inserting said filter element into said filter frame when expanded so that opposite marginal end edges on said filter panels engage said continuous wall to prevent air passage past the ends of said filter panels, providing a filter grill (28a) having a planar central area and a peripheral wall disposed normal to said central area, said filter grill being sized to enable said peripheral wall of said filter grill to be disposed in juxtaposed relation to the peripheral wall of the base surface with the filter element interposed between the central areas of said filter frame and filter grill, said filter grill having a plurality of separating fingers (13) formed integral therewith for insertion between adjacent pleats of the expanded filter element, attaching the filter grill to the filter frame (using staples 40), and inserting said separating fingers between pleats of said expanded filter element in Figs. 1-5 and 9-11B and col. 2, line 61 to col. 3, line 45.

Raber does not disclose the filter element having generally rigid end plates affixed to outer exposed surfaces of end panels.

Kubokawa et al. discloses a similar filter media (2) comprising an end plate (26) affixed to outer exposed surfaces of each opposite end panel (28,30) of said filter media in Figs. 1-3 and paragraphs [0035]-[0036].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the end plates of Kubokawa et al. into the filter media of Raber to provide the end panels with increased stiffness to improve the handlability of the filter media and to allow the filter media to be expanded and collapsed easily and uniformly, as suggested by Kubokawa et al. in paragraph [0035].

***Allowable Subject Matter***

12. Claims 21-28 are allowed.

13. Claims 3-8 and 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regard to claims 3-5, Schaaf does not disclose the air filter frame comprising a plurality of separating fingers.

Osendorf et al. discloses an air filter frame (10-13) comprising a separate spacer (6) having a plurality of separating fingers (105) disposed in a row and adapted to be attached to the filter frame for insertion between adjacent pleats of the pleated filter media (5) when in its expanded condition within the filter frame in Figs. 1-5, 9 and 12 and col. 1, line 62 to col. 4, line 56 and col. 6, line 37 to col. 9, line 65.

The prior art made of record does not teach or fairly suggest the air filter of claim 3 wherein the filter frame blank further defines a plurality of separating fingers disposed in a row and adapted to be attached to the filter frame for insertion between adjacent pleats of the pleated filter media when in its expanded condition within the filter frame.

The prior art made of record does not teach or fairly suggest the air filter of claim 5 wherein at least one of the filter frame wall panels has a plurality of separating fingers formed thereon in a manner to enable insertion of said fingers between adjacent pleats of a pleated filter media when supported by said rectangular frame.

With regard to claims 6-8 and 17-19, Schaaf does not disclose the air filter including a filter grill.

Raber discloses a similar air filter (10) including a plastic filter grill (20a) defining laterally opposite pairs of side and end panels formed integral with a generally open central area, said side and end panels being positioned substantially normal to said central area and being adapted to be secured to a filter frame (30) with said central areas (of the filter frame and filter grill) generally parallel, said filter grill and filter frame having mutually cooperable means (overlapping surfaces receiving staples 40) for retaining them in assembled relation with an expanded pleated filter media (11) disposed between the filter frame and the filter grill in Figs. 1-5 and 9-11B and col. 2, line 61 to col. 3, line 45.

The prior art made of record does not teach or fairly suggest the air filter of claim 6 including a filter grill made from a blank that is pre-scored, slit and die-cut to define

laterally opposite pairs of side and end panels formed integral with a generally open central area, said side and end panels being foldable to positions substantially normal to said central area and adapted to be received internally of free marginal edges of the filter frame with said central areas generally parallel, said filter grill and filter frame having mutually cooperable means for retaining them in assembled relation with an expanded pleated filter media disposed between the filter frame and the filter grill.

With regard to claims 21-28, Schaaf discloses a disposable air filter assembly comprising, in combination, an expandable pleated air filter element (23) having a plurality of interconnected panels of generally equal longitudinal length and transverse width, a filter frame (10) made from a generally rectangular corrugated blank defining a generally planar rectangular central area enabling air passage therethrough, said blank defining laterally opposite longitudinal side panels (10a) and transverse end panels (10a) disposed coplanar with said central area and being foldable about respective substantially longitudinal and transverse fold lines (1-14) to positions generally normal to said central panel and positions in juxtaposed relation to said central area, said side and end panels being mutually cooperable when in said positions normal to said central area to form a perimeter wall about and normal to said central area for receiving said filter element in its expanded condition, said filter frame blank being foldable (about lines 13) into a compact generally flat rectangular condition having a longitudinal length and transverse width generally similar to the longitudinal length and transverse

width of said filter element panels in Figs. 1-6 and page 1, col. 1, line 1 to page 2, col. 1, line 2.

Schaaf does not disclose the filter frame blank being formed from cardboard or the air filter assembly comprising a filter grill mountable on the filter frame.

Raber discloses a similar disposable air filter assembly comprising a plastic filter grill (20a) mountable to a filter frame (30), the filter grill defining a generally rectangular planar central area of a size and configuration substantially equal to the size and configuration of said filter frame central area and enabling air to pass therethrough, said filter grill further defining laterally opposite longitudinally extending marginal side wall panels and laterally opposite transverse marginal end wall panels in positions disposed normal to said central area for mutual cooperation to establish a boundary wall about the periphery of said filter grill central area in Figs. 1-5 and 9-11B and col. 2, line 61 to col. 3, line 45.

The prior art made of record does not teach or fairly suggest the air filter assembly of claim 21 wherein the filter frame blank is formed from cardboard or the filter grill being made from a generally rectangular corrugated cardboard blank defining a generally rectangular planar central area of a size and configuration substantially equal to the size and configuration of said filter frame central area and enabling air to pass therethrough, said filter grill blank further defining laterally opposite longitudinally extending marginal side wall panels and laterally opposite transverse marginal end wall panels foldable from positions coplanar with said central area to positions disposed normal to said central area for mutual cooperation to establish a boundary wall about

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the periphery of said filter grill central area, said filter grill central area and side wall and end wall panels being foldable into a compact generally flat rectangular condition having a longitudinal length and transverse width generally similar to the longitudinal length and transverse width of said collapsed filter element panels, said filter element, filter frame blank and filter grill blank being foldable into generally flat rectangular compact positions and stackable in juxtaposed relation for insertion into a carton.

### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Culbert et al., Ter Horst, Westlin et al., Atkins, Getzin, Allan et al., Thompson and Duffy references disclose similar air filter assemblies.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M. Greene  
Examiner  
Art Unit 1724

  
11/16/05

jmg  
November 16, 2005